CLAIMS

This listing of claims will replace all previous versions, and listings, of claims in this application.

1.-7. (Canceled)

8. (Withdrawn) A method for selecting a human cell strain for producing a desired protein, comprising:

(a) selecting a human cell strain with a total intracellular protein of on or about 0. 1-1 mg per 1,000,000 cell; and

(b) choosing, out of human cell strains with a total intracellular protein of on or about 0.1-1.0 mg per 1,000,000 cells, cell clones which have a doubling time of 18 to 24 hours and which have a 90% rate of cloning by limiting dilution method; and mutating said cell clones with carcinogens; and selecting cells out of said mutated cells, which have a doubling time of 18 to 24 hours and a 90% rate of cloning by limiting dilution method, to be said novel human cell strain.

9. (Withdrawn) The method for selecting a human cell strain of claim 8, wherein said carcinogens are selected from the group consisting of nitrosoguanidine (MNNG), phorbol ester(PMA) and ethylmethane sulfonate(EMS).

10. (Withdrawn) The method for selecting a human cell strain of claim 8, wherein said human cell strain can be continuously produced with high efficiency by culturing the clone, which has been transfected with the gene encoding the desired protein and has expressed the desired protein, in synthesis minimal essential medium ERDF with or without growth factors.

11. (Withdrawn) A method for producing proteins, comprising the use of the human cell strain of claim 1.

12. (Withdrawn) A method for producing proteins, comprising:

transfecting a gene encoding a desired protein into the human cell strain of claim 1; and

culturing the transfected cells, to continuously produce the desired protein with high efficiency.

13. (Withdrawn) The method of claim 12, wherein said transfecting is achieved by employing a vector containing a cytomegalovirus-derived promoter and a gene encoding the desired protein, to produce the desired protein.

14. (Withdrawn) The method of claim 12, wherein said human cell strain, which has been transfected with a gene encoding a desired protein and which has expressed the desired protein by the clone, is cultured in synthesis minimal essential medium ERDF with or without growth factors.

15. (Withdrawn) The method for producing protein of claim 14, wherein said growth factors include insulin, transferrin, ethanolamine, and sodium selenite.

16. (Withdrawn) The method for producing protein of claim 14, wherein said human cell strain, has been transfected with a gene encoding a desired protein and which has expressed the desired protein by the clone, is cultured in a large-scale and high-density culture (10 7 to 10 8/ml) with a serum-free medium.

17. (Withdrawn) A protein purifying method comprising:

using the human cell strain of claim 1 to produce a protein; and

purifying said protein, for which said human cell strain has been transfected with a gene encoding said protein.

18. (Withdrawn) The purifying method of claim 17, further comprising producing a highly efficient and highly pure desired protein derived from the gene encoding said protein, by culturing a clone, which has been transfected with a gene encoding the desired protein and which has expressed the desired protein, in synthesis minimal essential medium ERDF with or without growth factors.

19. (Canceled)

20. (Previously Presented) The cell culture SC-02MFP deposited as Accession Number FERM BP-10078.

21. (Previously Presented) The cell culture SC-01MFP deposited as Accession Number FERM BP-10077.

22. (New) A human cell strain for the continuous, long term, and stable production of a protein from an exogenous gene established by a method comprising:

a) obtaining a human myeloma cell strain having a total intracellular protein of from 0.1 to 1.0 mg per 1,000,000 cells;

b) selecting clones of said human myeloma cell strain having a doubling time of 18 to 24 hours and a 90% rate of cloning;

c) inducing mutation of the selected clones; and

d) selecting mutated clones having a doubling time of 18 to 24 hours and a 90% rate of cloning;

wherein the clones selected are capable of producing a protein from an exogenous gene at a yield of from 1 ng to 10 μg per day per 1,000,000 cells for at least a 2-month period.

23. (New) The human cell strain of claim 22, wherein the step of inducing mutation of the selected clones is carried out by growing the selected clones in a medium comprising a carcinogenic substance.

24. (New) The human cell strain of claim 23, wherein the carcinogenic substance is nitrosoguanidine.

25. (New) The human cell strain of claim 22, wherein the human myeloma cell strain is selected from RPMI8226 and KMS-12BM human cell strains.

26. (New) The human cell strain of claim 22, wherein the human cell strain is selected from SC-01MFP (Accession No. FERM BP-10077) and SC-02MFP (Accession No. FERM BP-10078).

27. (New) The human cell strain of claim 22, further comprising transfecting a gene encoding a desired protein into the human cell strain.

28. (New) The human cell strain of claim 27, further comprising culturing the transfected human cell strain in a serum free medium.

29. (New) A human cell strain, comprising mutated human myeloma cells capable of continuous production of a protein from an exogenous gene at a yield of 1 ng to 10 μg/day per 1,000,000 cells at least over a 2-month period.

30. (New) The human cell strain of claim 29, wherein the mutated human myeloma cells are mutated RPMI8226 or KMS-12BM cells.

31. (New) The human cell strain of claim 29, wherein said human cell strain is SC-01MFP (Accession No. FERM BP-10077) or SC-02MFP (Accession No. FERM BP-10078).